ABSTRACT OF THE DISCLOSURE

A multi-antenna garment comprising a first and second antenna incorporated into an electrically nonconductive garment, with tubular composites to improve gain and mitigate radiation hazard. The first antenna includes first and second RF elements attached to a first garment so that a gap exists between them, where the RF elements each form a band when the garment is worn by a wearer. The second antenna includes third, fourth, fifth, and sixth RF elements attached to a second garment worn over the first garment. RF feeds are electrically connected to the first, third, and fifth RF elements. Ground feeds are electrically connected to the second, fourth, and sixth RF elements. Insulating material disposed over gaps between the first and second, the third and fourth, and the fifth and sixth RF elements and in pockets in the regions of the RF feeds limits the wearer's exposure to electromagnetic field to acceptable levels.